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THE IMPACT OF TOP MANAGEMENT EDUCATION ON THE SOCIALLY RESPONSIBLE MANAGEMENT OF LOCAL GOVERNMENT IN THE CONTEXT OF INVESTMENT DEVELOPMENT*

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Abstract. The limited public budgets of local governments, socio-economic crises, and environmental and waste issues create increased demands on their spending. In this context, there is a need to manage the available resources economically and responsibly, which is also an effective communication tool. The scientific study focuses on researching the correlation between the educational attainment of the top management of local government and responsible leadership in the conditions of the Slovak Republic. As a primary indicator, we examine total debt per capita, which we do not primarily perceive as an element of irresponsible management but rather as a tendency of the statutory and parliamentary body to enter into credit relationships because of development activities and investments. We perceive investment activities in the context of educational attainment as a positive communicative tool that creates appropriate conditions for future responsible and sustainable management. The scientific objective of the scientific state is to point out, in terms of theoretical foundations, the role of education and knowledge in the management and achievement of economic and social effects based on the analysis of the relationship between selected indicators of education and total debt as a result of the development of investments. The uniqueness and rareness of the scientific study are the size of the research sample and understated interest in addressing the relationship between education and economic development. We used regression and correlation analysis models to find out these relationships. The results confirmed the predicted relationships but were not universal in considered regions. Based on the results, it was possible to define a barrier to education's positive effects: the local government's size.

Keywords: governance, top management; social responsibility; education; knowledge; human resources; local government; communication; investment

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JEL Classifications: H19, H30, H7

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1. Introduction

The positive effects of education and training on economic growth via good performance have been investigated during the latest decades. The role of education in economic development has been addressed by Azariadis and Drazen (1990). Baldacci, Clements, Gupta and Cui (2008) examined the effects of education on economic development in several countries. The issue of economic growth dynamics in the context of education spending has been addressed by Benos and Karagiannis (2010). The subject of their investigation was the different regions of Greece. Barro (1991, 1996, 2001) has systematically dealt with the effects of education and human capital. The regional aspects of the investigation of the links between education and the level of economic growth have been dealt with by Bloom, Sachs, Collier and Udry (1998), Collins and Bosworth (1996), Durlauf and Johnson (1995), Galor and Tsiddon (1997), who examined the principles of human capital distribution in relation with economic growth. Gemmel (1996) has also conducted comparative research with an assessment of the effects of human capital on economic growth, as did Gould and Ruffin (1995). A specific approach to investigating the relationship between education and economic growth has been the measurement of human capital levels and nonlinearities in economic development by Kalaitzidakis, Mamuneas, Savvides and Stengos (2001). Among other authors, the issue has been addressed by Kindleberger and Herrick (1977), Levine and Renelt (1992), who later published an analysis of the sensitivity of economic growth based on regression analysis. Maudos, Pastor and Serrano (1999) also examined the effects of productivity and human capital on economic growth in OECD countries. Murphy, Schleifer and Vishny (1991) and Rezk et al. (2019) studied education as an essential factor of economic growth. Education as a financial barrier problem, a fundamental human right that significantly influences the level of a country, has been studied by Pritchett (2001), Ramcharan (2002), and Ranis, Stewart and Ramirez (2000). Within the Slovak and Czech scientific approach, this topic has been investigated by Žižková et al. (1989), Goulliová (1998), Münich and Švejnar (2000), Kameníček (2003), Vomáčková (2007), Tiruneh et al. (2011).

The most known Slovak author was Benčo (1992, 2000, 2005), who researched the possibilities of quantifying the effects of expenditure on education for a long time. His research tasks quantified education's positive effects on different education levels. The problem with measuring the impact of education is the volatility of the observed results, which change over time due to the changing conditions of the education system and the labour market. Socio-economic crises also distort positive education effects.

2. Education as a fundamental determinant of local economic development, socially responsible management and effective communication

Just as education has effects at the macroeconomic level, its positive results can also be expected to be felt in the local government environment. Since few authors have addressed the educational attainment of elected officials at the local level and the context of local government economic indicators (Mihályi, 2019), we have to rely on the research conducted at the economy level.

One of the leading economists was Barro (1996). He focussed in his studies on examining the determinants of economic growth. In a 2003 (OECD) study, he addressed the topic of the relationship between education and economic development. Barro considered human capital as a determinant of economic growth and examined the links between the quality of human capital and education.

Within the Central European area, Dudova (2009) examined variations in education levels and economic growth rates in selected countries around the world. Using statistical dependency models, she found a relationship between economic growth and the number of tertiary graduates. Past analyses showed that university graduates were better valued in the labour market than those with less education. The high competitive pressure within the

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higher education market and the recent increase in the number of workers with a university degree have devalued such educated workers and brought about a shortage of workers with lower vocational (mainly craft) education. For this reason, there have been visible distortions compared to the conclusions addressed in the past. However, the effects of education are not only economic but also non-economic. Education and its impact also have several positive outcomes that are difficult to quantify economically but have apparent positive effects on society (social, cultural, environmental, crime, health and active leisure). Therefore, the general thesis on the positive impacts of education and socio-economic growth is still valid. Ramcharan (2002) concluded that no country had achieved significant economic growth without investing in education. However, the structure of this expenditure is also important. Ramacharan's research found that in countries where secondary education was underdeveloped, economic growth rates were lower than in other countries. Examining the optimal ratio of allocated resources according to labour market indicators is necessary for deciding on the appropriate allocation of resources.

Another study that can confirm the thesis on the importance of education in the local government environment is the study by Jarecki (2009). The author examined the importance of higher education and its impact on the country's economic indicators.

From a microeconomic perspective, from the level of the local governments we have studied, the neoclassical economists Mankiw, Romer and Weil (1992) have also confirmed positive effects. According to them, human capital has a positive impact on profits. A recent study by Ntshangase and Msosa (2022) point to inefficiencies in service delivery of municipalities caused by human factor.

Blakemore (2010) examined the evolution in real GDP concerning the education of the labour force. His findings led to the conclusion that improvements in living standards are directly related to the quality of human resources and the evolution of real wages. Living standards improve with increasing education, systematic training, and expanding knowledge base. He argues that regional development is also directly linked to an increase in the quality of human resources and a consequent rise in wages. Countries with high levels of human capital have significantly better living standards than countries with lower levels of human capital (Tiruneh et al., 2011). Ramos, Surinach and Artís (2009) identified an unmet demand for highly educated workers.

Also, in recent years, several theoretical and empirical studies have examined the interrelationship between education, human capital and economic growth. Many studies look at the effects of education on the domestic economy and its international spillovers. We review these studies in the discussion section.

The main objective of this paper is to highlight, in terms of theoretical foundations, the role and importance of education and knowledge in managing and achieving economic, social and societal effects through analyses of the links between education and total debt perceived as a result of development investments. The research is carried out in the basic spatial units in the Slovak Republic, i.e. municipalities or local governments, which are classified according to the NUTS classification into NUTS 3. The scientific study's originality and uniqueness are presented by the research sample size (all basic spatial units of territorial self-government forming administrative regions of the Slovak Republic), the unsolved problem of solving the relationship between education and economic development.

3. Materials and methods

We used several methods of testing statistics in the area of dependency tightness to identify the relationships between the achieved education of the top management of the local government and selected management indicators. For the needs of the scientific study, we chose to examine the relationship between the total debt of the local government (which primarily arises due to development investments) and the achieved education of top

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management. We see investing in development activities as the basis for future good management and achieving positive economic results.

We proceeded in part analogously to the studies already carried out. The main problem in formulating the starting points was the need for such focused research. We, therefore, proceed only from the analogy of the examined relations between education and economic development and the methodologies used by the authors. Most authors who dealt with this issue used regression and correlation statistical models with the least squares method. Romer (1989) and Azariadis & Drazen (1990) quantified interdependence relationships using the least squares method and the Instrumental Variables method.

Regarding the impact of education, they have shown that literacy positively affects the country's economic and social growth. Using the same method, Barro (1991) concluded that GDP per capita growth correlated with the number of people educated and the population's educational level. Indirect linear dependence has been demonstrated concerning the indicator of the number of students per teacher and economic growth. Murphy, Shleifer and Vishnu (1991) used the least squares method to show an equally positive relationship between student numbers and economic development. Levine and Renelt (1992) also revealed the positive impact of education on per capita GDP growth using the Extreme Bounds Analysis method. Mankiw, Romer, and Weil (1992) confirmed a similar effect. Their study examined the percentage of the working-age population participating in tertiary education and its impact on the country's economic indicators.

Another method was used by Durlauf and Johnson (1995). Using the regression tree method, they found a positive linear relationship between the proportion of the working-age population who were part of tertiary education and GDP growth. This relationship has only been proven in developed countries. Other authors who used the least squares method were Lee (1995), contrast, Bloom et al. (1998) and Temple (1999), Hanushek and Kimko (2000) and Hanushek and Kimko (2000). All authors examined the relationship between education parameters and GDP growth. Another method that was used to explore the interrelationships was 3SLS (Three-stage least squares) (Gemmel, 1996; Collins & Bosworth, 1996). Siddiqui (2006) identified a weak linear relationship between the length of education and economic growth using Feasible Generalized Least Squares (FGLS). Using the Error Correction Model using the "one step" procedure, Odit, Dookhan and Fauzel (2010) showed a positive effect on the length of school attendance (length of education) on GDP growth per capita.

In examining the issues in this paper, we have only partially relied on the above studies. Correlation analysis is applied in this case to assess the intensity (tightness) of free (statistical) dependence between total debt per capita and level of education.

We used the Spearman coefficient method to determine their degree of dependency. We defined the Spearman correlation coefficient as a selection correlation coefficient calculated from pairs. Using the ordinal regression method, we defined the factors that strongly impact local government performance. It is assumed that the trend f (t) depends (linearly or nonlinearly) on the unknown parameters β0, β1, ..., βk and the known functions φ0 (t), φ1 (t), ..., φk (t), which no longer contain any unknown parameters, t. j. f (t) = g (β0, β1, ..., βk; φ0 (t), φ1 (t), ..., φk (t)). The relations for regression and correlation analysis are given in the following form: for y dependent on x, the relation holds:

$$a = \frac{\Sigma[(x - \bar{x}]) \,.\, (y - y)}{\Sigma(x - \bar{x})^2} \qquad (1)$$

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Construction method of scientific observation for y dependent on x
the constant b is in the form:

$$b = \bar{y} - a\bar{x} \tag{2}$$

Constant in the form b

For x dependent on y the relation holds:

$$a = \frac{\Sigma[(y - \bar{y}]) . (x - \bar{x})}{\Sigma(y - \bar{y})^2}, \qquad b = \bar{x} - a\bar{y} \tag{3}$$

Construction method of scientific observation for x dependent on y.

The regression coefficient expresses the direction of the regression line, i.e. the slope of the line to the x-axis. It characterizes the change in total debt per capita, by changing the level of education of top management by one unit. Suppose the value is positive, with the growth of education, as the variable X. In that case, there is also an average increase in the total debt as a dependent variable Y. We call this dependence positive, resp. direct dependence. If the regression coefficient is negative, when the values of the independent variable X (education) increase, the values of the total debt as the vertical belt Y decrease on average indirect dependence.

According to the Statistical Office of the Slovak Republic, local territorial self-government in Slovakia consists of 2,890 municipalities (cities and villages), of which 2,640 are municipalities with less than 3,000 inhabitants, i. 91.34%, which inhabit 38.34% of the population of the Slovak Republic.

At the same time, 0.95% of the population lives in municipalities classified in the size category of up to 200 inhabitants. 4.54% of people live in the size category of 200-500 inhabitants, which consists of 710 municipalities. Even more, 755 municipalities from a size group had 500-1,000 inhabitants. 570 municipalities, inhabited by 26.12% of people, are from 1000 - 2000 inhabitants; 190 municipalities, inhabited by 19.72%, are among 2000 - 3000 inhabitants.

There are 109 municipalities with more than 3,000 inhabitants in Slovakia. Another category is cities; currently, 141, of which 22.46% of the population live in cities of size group over 50,000, and the total number of such cities is 10. The settlement structure of the Slovak Republic is shown in Figure 1.

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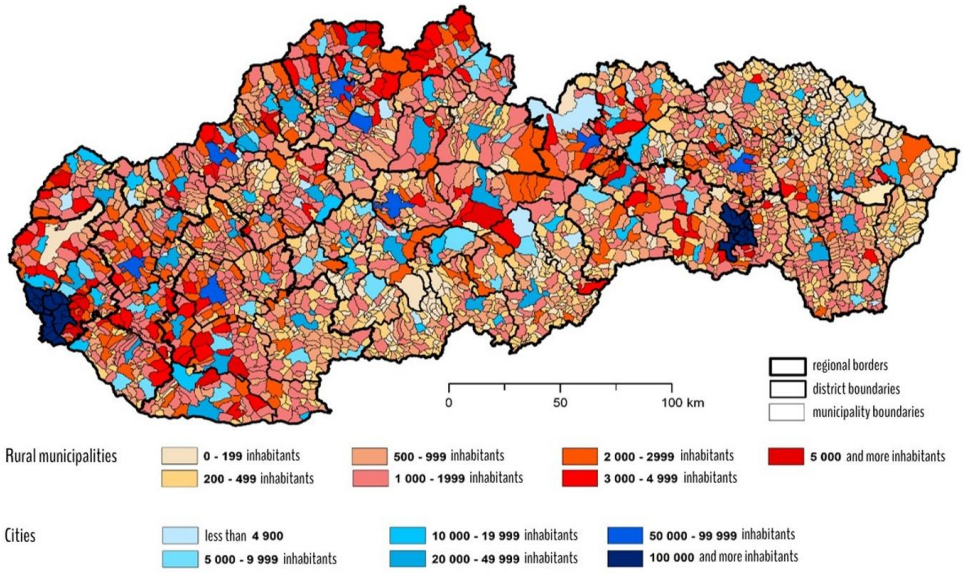

Figure 1. Territorial arrangement of the Slovak Republic

Source: New Municipal Management (Kaliňák et al., 2021)

Individual municipalities, regardless of their size grouping, have different economic backgrounds, budget sizes, revenues, and the ability to obtain external financial resources for the budget. A more detailed categorization is shown in Table 1.

Table 1. Local territorial self-government in Slovakia by size group of municipalities

*Municipality size group**	*Number of municipalities in the group*	*in %*	*Number of municipalities total*	*Number of inhabitants*	*in %*	*Total inhabitants and in %*
0 – 99	142	4,91	2640 municipalities/villages	9 217	0,17	2 092493 38,34%
100 – 199	273	9,45		42 526	0,78	
200 – 499	710	24,57		247 719	4,54	
500 – 999	755	26,12		538 214	9,86	
1000 – 1999	570	19,72		800 062	14,66	
2000 – 2999	190	6,57		454 755	8,33	
3000 – 3999	76	2,63	109 villages 141 cities Total: 250 municipalities	263031	4,82	3 365380 61,66%
4000 – 4999	39	1,35		171224	3,14	
5000 – 9999	63	2,18		425207	7,79	
10000 – 19999	34	1,18		480213	8,80	
20000 – 49999	28	0,97		799759	14,65	
50000 – 99999	8	0,28		549627	10,07	
nad 100000	2	0,07	Bratislava, Košice	676319	12,39	
Total:	2890	100,00	2890	5 457873	100,00	

Source: New Municipal Management (Kaliňák et al., 2021)

The hierarchical division of the country into territorial units was introduced by Eurostat for the member states of the European Union in 1988 for the needs of statistical monitoring and analysis of the economic and social situation in individual regions and the needs of the regional economy, is according to the NUTS classification of

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statistical territorial units. The NUTS classification consists of at least three subdivisions. In the Slovak Republic, the following NUTS classification is:

Table 2.NUTS classification in the Slovak Republic

Level NUTS	*English acronym / Slovak acronym*	*Territory*
Regional levels	NUTS 1 / RŠÚJ 1	Slovak Republic
	NUTS 2 / RŠÚJ 2	Areas: 4- Bratislava Region, Western Slovakia, Central Slovakia, Eastern Slovakia
	NUTS3 / RŠÚJ 3	Regions: 8
Local levels	LAU 1 / LŠÚJ1	Districts: 79
	LAU 2 / LŠÚJ 2	Municipalities, including urban districts: 2890

Source: The Statistical Office of the Slovak Republic, 2022

The analysis was based on a core set of 2890 local authorities, providing a sufficiently relevant view of the context under study. The total number was corrected based on test statistics. The resulting structure of the research sample is presented in the table below.

Table 3. Research sample by educational attainment of top management

size of the municipality	*-199*		*200 - 499*		*500 - 999*		*1000 - 1999*		*2000 - 4999*	
education	Number	%	Number	%	Number	%	Number	%	Number	%
primary/secondary school	286	73,7	501	67,6	428	55,7	237	40,9	96	33,0
1st level of higher education	15	3,9	14	1,9	19	2,5	14	2,4	9	3,1
2nd level of higher education	80	20,6	217	29,3	302	39,3	289	49,8	163	56,0
3rd level of higher education	7	1,8	9	1,2	19	2,5	40	6,9	22	7,6
Total	388	100,0	741	100,0	768	100,0	580	100,0	291	100,0
size of the municipality	*5000 - 9999*		*10000 - 19999*		*20000 - 49999*		*50000 - 99999*		*100000+*	
education	Number	%	Number	%	Number	%	Number	%	Number	%
primary/secondary school	16	24,6	5	13,9	9	20,9	3	33,3	2	100,0
1st level of higher education	1	1,5	0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
2nd level of higher education	42	64,6	23	63,9	24	55,8	5	55,6	0,0	0,0
3rd level of higher education	6	9,2	8	22,2	10	23,3	1	11,1	0,0	0,0
Total	65	100,0	36	100,0	43	100,0	9	100,0	0,0	0,0

Source: own elaboration, 2022

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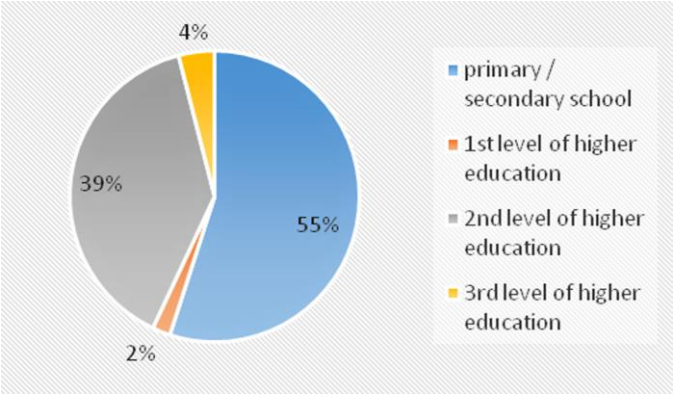

Figure 2. Structure of municipalities by educational attainment of top management

Source: own elaboration, 2022

The summary results of the sub-regional analyses by individual indicators are presented in the following text of the scientific state.

4. Results

In the present research study, to prove the impact of education on selected economic indicators, we investigated the relationship of educational attainment of the top management of local government (mayor/mayor) on the total debt per capita, which is the result of large-scale investments. We assume that the resulting debt results from the ability and willingness of local governments' statutory and parliamentarians (as top management) to enter into credit relationships because of development activities. Local governments cannot secure financing for investment activities from their resources alone. One way is to use repayable financial resources (KZ 52 - bank loans). In this respect, local government indebtedness cannot primarily be seen as a manifestation of poor and irresponsible management but rather as a consequence of investing in future development.

Total debt per capita is thus influenced by the intensity of local government development, the willingness of statutory authorities to enter into long-term commitments or the ability or inability to finance capital needs from their resources.

Table 4. Dependency analysis of total debt by income size and NUTS regions

Total debt per capita	up to 199	200 - 499	500 - 999	1000 - 1999	2000 - 4999	5000 - 9999	10000 - 19999	20000 - 49999
NUTS 3 BanskáBystrica	0,059	0,096	0,107	-0,117	0,075	0,235	0,804	
NUTS 3 Bratislava			-0,037	0,140	-0,125	0,237	0,620	-0,499
NUTS 3 Košice	-0,079	0,194	0,082	-0,099	0,078	-0,177		0,246
NUTS 3 Nitra	0,012	-0,070	0,121	-0,131	-0,336	-0,049	0,759	0,099
NUTS 3 Prešov	-0,088	0,077	-0,037	0,091	-0,195	-0,388	-0,266	-0,760
NUTS 3 Trenčín	0,142	0,061	-0,141	0,108	0,113		0,228	-0,522
NUTS 3 Trnava		-0,242	-0,025	0,052	0,184	-0,282	-0,079	-0,089
NUTS 3 Žilina	-0,167	-0,073	-0,098	-0,073	0,096	-0,328		-0,242

Source: own elaboration, 2022

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Those relationships could not be proven in all cases. Direct and indirect linear relationships have been demonstrated, especially in larger groups that can manage sustainable repayment of the loans taken out. The highest values of the correlation coefficients (indirect linear dependence) were obtained in the NUTS 3 municipalities of Trenčín and BanskáBystrica for municipalities between 5000 and 9999 and municipalities with a population above 20000 inhabitants. In this case, it can be assumed that practical experience rather than educational attainment prevails in top management. The dependence of the three variables is shown in the following figure.

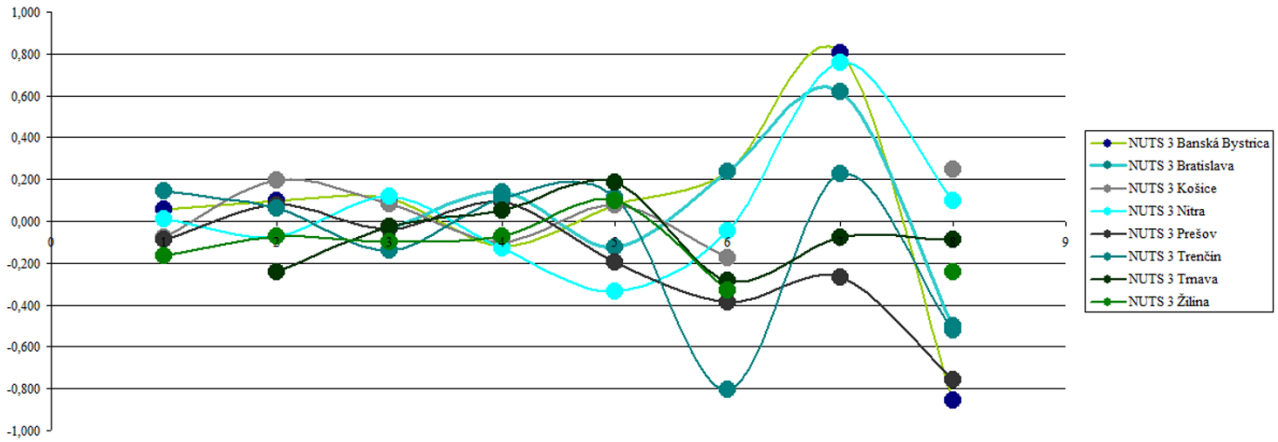

Figure 3. Dependency breakdown of municipalities by total debt, size groups and NUTS 3

Source: own elaboration, 2022

As presented in the previous graph, the correlation between education or experience has been demonstrated mainly for large local governments. The correlations in smaller municipalities are more or less independent of education and experience and are influenced by other environmental factors. Another reason may be the size of the municipality itself. In the case of small municipalities, where top management has a higher level of education, there are no positive effects due to budgetary constraints and the impossibility of repaying loan commitments. The financial constraints of local government, therefore, stifle higher management activity.

Table 5. Total debt per capita by the level of education and NUTS regions

	BB	BA	KE	NR	PO	TN	TT	ZI
Primary and secondary education	36,7	48,5	55,9	77,0	67,4	59,7	52,1	55,5
1st level of higher education	94,3			83,9		46,8	122,5	97,2
2nd level of higher education	56,9	160,7	37,9	49,9	78,6	100,9	99,4	55,7
3rd level of higher education	58,6	60,5	84,4	78,8	43,0	101,5	48,7	67,3

Source: own elaboration, 2022

The previous table presents the relationship between per capita debt values and educational attainment. The absolute lowest values were achieved in the education group - university degree I.

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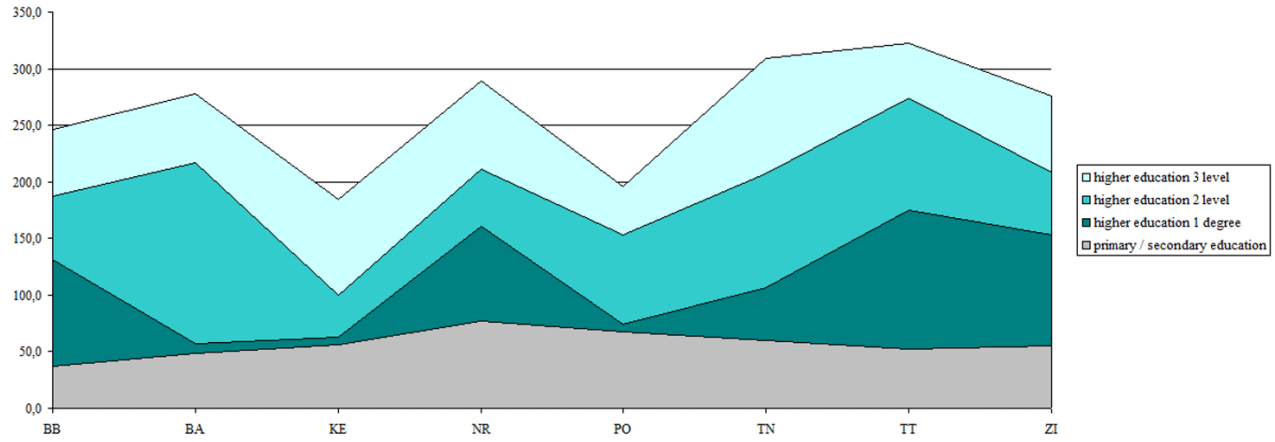

Figure 4. Distribution of local governments by unit debt and educational attainment of top management in NUTS 3

Source: own elaboration, 2022

Starting from a basic premise, high debt per capita does not necessarily imply social irresponsibility in management. As long as its creation is associated with increased investment in infrastructure, which is essential for local government to deliver its core agenda, it is explicitly desirable. We assume that higher indebtedness will be associated with higher education and the overall qualification of top management. A regression analysis made a partial confirmation of the thesis possible. The regression model is presented in the following table.

Table 6. Regression model of the relationship between education and total debt

Region		*Unstandardized Coefficients*		*Standardized Coefficients*	*t*	*Sig.*
		B	*Std. Error*	*Beta*		
NUTS 3 Bratislava	Constant	45,045	112,260		0,401	0,689
	Education	158,116	156,150	0,108	1,013	0,314
NUTS 3 Trnava	Constant	36,868	6,369		5,788	0,000
	Education	11,335	8,499	0,080	1,334	0,183
NUTS 3 Trenčín	Constant	42,702	7,532		5,669	0,000
	Education	21,523	10,158	0,133	2,119	0,035
NUTS 3 Nitra	Constant	35,392	4,831		7,326	0,000
	Education	16,154	6,700	0,128	2,411	0,016
NUTS 3 Žilina	Constant	31,717	5,514		5,752	0,000
	Education	6,270	7,861	0,045	0,798	0,426
NUTS 3 BanskáBystrica	Constant	27,775	3,983		6,974	0,000
	Education	12,865	6,316	0,090	2,037	0,042
NUTS 3 Prešov	Constant	38,276	3,633		10,536	0,000
	Education	2,871	5,493	0,020	0,523	0,601
NUTS 3 Košice	Constant	44,111	6,197		7,118	0,000
	Education	-7,354	10,327	-0,033	-0,712	0,477

Source: own elaboration using SPSS

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The implemented regression model proved its validity only in isolated cases in the Trenčiansky, Nitriansky and Banskobystricky regions. If the education of top management changes by one unit (increase), the debt per capita rises by 21.523 €. In the BanskáBystrica region, with an increase in education of one degree, the total debt will increase by € 12,865. The regression models indirectly show that total debt rises only with the increase in the level of education. More educated statisticians are more likely to incur local government debt for rational reasons. The group with higher educational attainment can be expected to be more active in development projects and, consequently, in capital expenditures requiring co-financing from repayable sources.

5. Discussion

Examining the direct impact of the education of statutory bodies on specific local government areas, such as total debt, investment, and capital investment, needs to be addressed in foreign sources. For this reason, comparing the results found with foreign countries is impossible. This topic was discussed partially by Mihályi (2019), who used regression and correlation models in the example of a research sample of about 200 local governments. The uniqueness of the scientific study lies in the fact that it was conducted on a core set of local governments and thus provided unbiased results. The research focused on a core set of 2930 local government units. From a methodological point of view, we are based on foreign research on the positive impact of education on the economic indicators of states and selected regions.

In 2021, a study was conducted by the authors to examine the impact of education exports on the country's economic growth. The authors conducted the study using Australia as an example, given that the country is one of the leading destinations for international students. International education has played an essential role in the economy of many countries in recent decades. This sector supports job creation in these countries and represents a necessary source of skilled labour, favouring economic growth. This study analyses in detail the impact of the internationalization of education on the Australian economy based on quarterly data from 1974 to 2019 (Chowdhury, 2021). The results suggest a long-run positive relationship between international education on economic growth and employment, directly linked to investment. The authors also formulate several economic policy recommendations for adopting proactive, flexible and innovative approaches to attract international students that enhance economy-wide socio-economic spillovers. The study proposes a set of concrete measures to promote the internationalization of education to foster economic growth (Chowdhury, 2021).

Next, we draw on the Anglo-American school, which has examined the changes in the structure of high-skilled occupations in the US economy over the past 50 years. It analyzed the convergence in the occupational distribution between 1960 and 2010 on total productivity. It looked at talent allocation and its impact on productivity and economic growth (Hsieh et al. 2019).

Another study we draw on in our research paper is Soo-Wan and Ahn (2020). The authors examine theoretically and empirically whether public spending on education, health care, and social services functions as efficient investments in the welfare state. The authors analyze the impact of these investments on enhancing human capital formation, promoting labour market participation, and creating new jobs. The results confirmed that public spending on education, health care, and social services had positive medium- and long-term effects on economic performance (Kim & Ahn, 2020). Regarding our problem, we examine the ex-post impact of education spending stemming from educational attainment. We predict that the propensity to engage in development activities will be greater for top local government executives with higher educational attainment than those with lower educational attainment (we start from the premise that, due to the constraints of public budgets, more intensive local government development is not possible without investment and temporary debt). Closer to our view of the issue is the study by Ojha, Ghosh, and Pradhan (2021). The authors analyzed the role of public spending on secondary and higher education in achieving inclusive economic growth in a country.

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The findings suggest that increasing public expenditure on education leads to higher economic growth and lower social inequality. They also point to the fact that exogenous technological progress increases the positive effects of public spending on education, which has positive spillovers across multiple spheres of the economy (Ojha et al., 2021). In our research study, we examine the downstream effects of spending manifesting themselves in the practical realm of top management's performance, namely the propensity to invest in development projects (we examine through the temporary debt effect).

We identified partial starting points in the study by Rehme (2007). He examined how education simultaneously affects economic growth and income inequality. He arrives at a finding that does not support the standard thesis based on human capital theory. He argues that higher education does not necessarily reduce income inequality. Other authors on whose conclusions we draw have analyzed investment in human capital and its impact on the type of human capital, its quantity, and the intensity of its use. For us, the most important conclusions were based on examining technological change in a skills-based economy. They addressed their impact on economic growth and socio-economic inequality (Murphy and Topel, 2016).

The central premise of our research study is also based on the work of Patricio and Ruffini (2021), who examined the links between additional time spent in primary and secondary school and economic well-being. The approach relied on human capital, and the findings show that large-scale investment in public education can yield positive long-term economic effects (Patricio & Ruffini, 2021). The main idea of our research is that top executives who attain higher education are more willing to enter into the credit relationships necessary to make more significant investments, even at the cost of temporarily indebting local government. In light of the above, another fascinating study where the authors developed a dynamic model of the global economy. This takes into account demographic and educational aspects. By quantitative analysis, they highlighted the effects of human capital accumulation and income. These manifest themselves gradually and cumulatively (as in the case of investments made in local government). Another study examines the intensity of short- and long-term effects and the convergence of income in relation to human capital (Marco, Docquier & Machado, 2018).

Conclusions

Socially responsible behaviour is becoming an increasingly discussed topic in the local government environment, an essential communication tool, and the number of organizations applying the principles of socially responsible behaviour is growing. These activities must correspond with responsible local government management.

The scientific study investigated the relationship between education as a fundamental element and factor influencing the propensity to act responsibly in local government. The uniqueness of the scientific state lies in the fact that the researchers analyzed the results of 2890 local governments in the Slovak Republic, which represents a basic set and a vast number of basic spatial units on the territory of the Slovak Republic. As research with this focus has yet to be conducted, we relied on studies showing education's positive impact on the economy's development. Although many foreign and domestic studies confirm the positive effect of education and responsible management, in our case, this relationship was only confirmed in some cases.

One of the critical factors that represent a barrier to the positive effects of education is the size of the local government and the associated budget constraints and inability to repay the obligations arising from external financing of development investments.

This problem aside, the emphasis on education is crucial from a social responsibility perspective. Still, in this case, the synergy of formally acquired knowledge and practical experience must be harnessed to eliminate this constraint partially. Combining the above variables gives each senior local government manager a knowledge

base that enables them to manage responsibly and efficiently while ensuring sustainable growth. The regression model run on the base set confirmed that total debt per capita does not imply irresponsible management in most cases but rather a propensity to undertake more demanding investment activities. These values were positively correlated with educational attainment, but only in some regions.

References

Azariadis, C., & Drazen, A. (1990). Threshold Externalities in Economic Development. *The Quarterly Journal of Economics*, 105(2), 501-526. https://doi.org/10.2307/2937797

Baldacci, E., Clements, B., Gupta, S. & Cui, Q. (2008). Social Spending, Human Capital, and Growth in Developing Countries. *World Development*, 36(8), 1317-1341. https://doi.org/10.1016/j.worlddev.2007.08.003

Barro, R. J. (1991). Economic Growth in a Cross Section of Countries. *The Quarterly Journal of Economics*, 106 (2), 407-443. https://doi.org/10.2307/2937943

Barro, R. J. (1996). *Determinants of Economic Growth: A Cross-Country Empirical Study*. (NBER Working Paper Series 5698). National Bureau of Economic Research. https://doi.org/10.3386/w5698

Barro, R. J. (2001). Human Capital and Growth. *The American Economic Review*, 91(2), 12–17. https://doi.org/10.1257/aer.91.2.12

Benčo J. et al. (2005). *Ekonomika a manažment vzdelávania* (1th ed.). Ekonomická fakulta UMB, Banská Bystrica.

Benčo, J. (1992). *Ekonomické problémy vzdelávania* (1th ed.). Edičné stredisko EU, Bratislava.

Benčo, J. et al. (2000). *Sociálna politika a sociálny rozvoj*(1th ed.). EkonomickáfakultaUMB, BanskáBystrica.

Benos, N., & Karagiannis, S. (2010). *The Role of Human Capital in Economic Growth: Evidence from Greek Regions*. In N. Salvadori (Ed) Institutional and Social Dynamics of Growth and Distribution (pp. 137-168) Cheltenham, UK, Northampton, MA, USA: Edward Elgar.

Bloom, D. E., Sachs, J. D., Collier, P., & Udry, C. (1998). Geography, Demography, and Economic Growth in Africa. *Brookings Papers on Economic Activity*, (2), 207-295. https://doi.org/10.2307/2534695

Chowdhury, M. B. (2022). Internationalization of Education and Its Effect on Economic Growth and Development. *The World Economy*, 45(1), 200-219. https://doi.org/10.1111/twec.13174

Collins, S. M., & Bosworth, B. P. (1996). Economic Growth in East Asia: Accumulation versus Assimilation. *Brookings Papers on Economic Activity*, 27(2), 135-204.

Delogu, M., Docquier, F., & Machado, J. (2018). Globalizing Labor and the World Economy: The Role of Human Capital. *Journal of Economic Growth*, 23(2), 223-58. https://doi.org/10.1007/s10887-017-9153-z

Domínguez, P., & Ruffini, K. (2020). Long-Term Gains from Longer School Days. (IDB Working Paper Series 10366). Inter-American Development Bank https://doi.org/10.18235/0002416

Domínguez, P., & Ruffini, K. (2021). Long-Term Gains from Longer School Days. *Journal of Human Resources*, May, 0419-10160R2. https://doi.org/10.3368/jhr.59.2.0419-10160R2

Durlauf, S.N., & Johnson, P.A. (1995). Multiple Regimes and Cross-Country Growth Behaviour. *Journal of Applied Econometrics*, 10(4), 365-84. https://doi.org/10.1002/jae.3950100404

Galor, O., & Tsiddon, D. (1997). The Distribution of Human Capital and Economic Growth. *Journal of Economic Growth*, 2(1), 93-124. https://doi.org/10.1023/A:1009785714248

Gemmell, N. (1996), Evaluating the Impacts of Human Capital Stocks and Accumulation on Economic Growth: Some New Evidence, *Oxford Bulletin of Economics and Statistics*, 58(1), 9-28, https://EconPapers.repec.org/RePEc:bla:obuest:v:58:y:1996:i:1:p:9-28

Gould, D.M., & Ruffin, R.J. (1995). Human Capital, Trade, and Economic Growth. *Weltwirtschaftliches Archiv*, 131(3), 425-45. https://doi.org/10.1007/BF02707911

Hanushek, E. A., & Kimko, D. (2000). Schooling, Labor-Force Quality, and the Growth of Nations. *American Economic Review*, 90(5), 1184-1208. https://doi.org/10.1257/aer.90.5.1184

Hsieh, Ch-T., Hurst, E., Jones, Ch. I., & Klenow, P. J. (2019). The Allocation of Talent and U.S. Economic Growth. *Econometrica*, 87(5), 1439-1474. https://doi.org/10.3982/ECTA11427

Kalaitzidakis, P., Mamuneas, T. P., Savvides, A., & Stengos, T. (2001). Measures of Human Capital and Nonlinearities in Economic Growth. *Journal of Economic Growth*, 6(3), 229-254. https://doi.org/10.1023/A:1011347816503

Kaliňák, M. et al. (2021). *Nový komunálny manažment* (1th ed.). ZMOS, Bratislava.

Kameníček, J. (2003). *Lidský kapitál: úvod do ekono miechování* (1th ed.).Karolinum, Praha.

Kim, S.-W., & Ahn, S-H. (2020). Social Investment Effects of Public Education, Health Care, and Welfare Service Expenditures on Economic Growth. *Asian Social Work and Policy Review*, 14 (1), 34-44. https://doi.org/10.1111/aswp.12190

Kindleberger, C.P., & Herrick, B. (1977). *Economic Development* (1th ed.).MacGraw-Hill, New York.

Lee, C.G. (2010). Education and economic growth: Further empirical evidence. *European Journal of Economics, Finance and Administrative Sciences*, 23, 161-169.

Levine, R., & Renelt, D. (1992). A Sensitivity Analysis of Cross-Country Growth Regressions. *The American Economic Review*, 82(4), 942-963. http://www.jstor.org/stable/2117352

Mandal, B., Batina, R. G., & Chen, W. (2018). Do Gender Gaps in Education and Health Affect Economic Growth? A Cross-Country Study from 1975 to 2010. *Health Economics* 27(5), 877-86. https://doi.org/10.1002/hec.3636

Mankiw, N. G., Romer, D., & Weil, D. N. (1992). A Contribution to the Empirics of Economic Growth. *The Quarterly Journal of Economics*, 107(2), 407-37. https://doi.org/10.2307/2118477

Maudos, J., Pastor, J.M., & Serrano, L. (1999) Total factor productivity measurement and human capital in OECD countries. *Economics Letters*, 63(1), 39-44.

Münich D., Švejnar J. (2000). *Souvislosti hospodářského a společenské horůstu*. Národní vzdělávací fond. http://www.nvf.cz/rozvoj_lz/studie.htm

Murphy, K., & Topel, R. (2016). Human Capital Investment, Inequality, and Economic Growth. *Journal of Labor Economics*, 34(S2), 99-127. https://doi.org/10.1086/683779

Murphy, K., Schleifer, A., & Vishny, R. (1991). The Allocation of Talent: Implications for Growth. *The Quarterly Journal of Economics* 106(2), 503. https://doi.org/10.2307/2937945

Ntshangase, B. & Msosa, S. (2022). Enhancing Service Delivery for Metropolitan Municipalities in South Africa via Project Management. *Insights into Regional Development*, 4(3), 127-138. https://doi.org/10.9770/IRD.2022.4.3(8)

Odit, M. P., Dookhan, K., & Fauzel, S. (2010). The Impact of Education On Economic Growth: The Case Of Mauritius. *International Business & Economics Research Journal (IBER)*, 9(8). https://doi.org/10.19030/iber.v9i8.620

Ojha, V. P., Ghosh, J., & Pradhan, B. K. (2022). The Role of Public Expenditure on Secondary and Higher Education for Achieving Inclusive Growth in India. *Metroeconomica*, 73(1), 49-77. https://doi.org/10.1111/meca.12353

Pritchett, L. (2001). Where Has All the Education Gone? *The World Bank Economic Review*, 15(3), 367-391. https://doi.org/10.1093/wber/15.3.367

Ramcharan, B.G. (2002). *Human rights and human security* (1th ed.). Martinus Nijhoff Publishers, London.

Ranis, G., Stewart, F., & Ramirez, A. (2000). Economic Growth and Human Development. *World Development*, 28(2), 197-219. https://doi.org/10.1016/S0305-750X(99)00131-X

Rehme, G. (2007). Education, Economic Growth and Measured Income Inequality. *Economica* 74(295), 493-514. https://doi.org/10.1111/j.1468-0335.2006.00555.x

Rezk, M. R., Radwan, A., Salem, N. M., Sakr, M. M., & Tvaronavičienė, M. (2019). Foresight for sustainable energy policy in Egypt: results from a Delphi survey. *Insights into Regional Development*, 1(4), 357-369. https://doi.org/10.9770/ird.2019.1.4(6)

Romer, P. (1989). Human Capital and Growth: Theory and Evidence. (NBER Working Paper Series 3173). National Bureau of Economic Research. https://doi.org/10.3386/w3173

Siddiqui, A. (2006). Macroeconomic returns to education in South Asia. *Journal of Economic Cooperation among Islamic Countries*, 27(4), 25-44.

Temple, J. (1999). A Positive Effect of Human Capital on Growth. *Economic Letters*, 65(1), 131-134. https://doi.org/10.1016/S0165-1765(99)00120-2

Tiruneh, M.W. et al. (2011). *Determinanty economic kéhorastu a konkurencies chopnosti: výzvy a príležitosti* (1th ed.).Ekonomický ústav Slovenskej akadémie vied, Bratislava.

Vomáčková, H. (2007). *Ekonomický rozměrlidského a sociálního kapitálu* (1th ed.). Univerzita J.E. Purkyně v Ústínad Labem, Ústínad Labem.

Výrostová, E. (2010). *Regionálna ekonomika a rozvoj*. Iura Edition, Bratislava.

Žižková J. et al. (1989). *Ekonomika nevýrobní sféry - sociálně ekonomické aspekty vzdělávaní a školství* (1th ed.). Vysoká škola ekonomická v Praze, Praha.

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